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## Lithuania

### Agricultural Situation

### Biofuel and Biomass, Production and Plans

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**Report Highlights:**

Lithuania is a major producer and user of biomass for thermal and electricity production. It currently has moderate production of biodiesel (methyl-ester) and ethanol but has ambitious plans to increase production of biofuels to 380,000 tons by 2010.

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## Renewable Energy Use and Production in Lithuania: Biofuel and Biomass

Lithuania is a major producer and user of biomass for thermal and electricity production. It currently has moderate production of biodiesel (methyl-ester) and ethanol but has ambitious plans to increase production of biofuels to 380,000 tons by 2010.

### Energy overview

Currently Lithuania produces 33 percent of its energy from nuclear power, 33 percent from oil and about 24 percent from natural gas. Renewable resources such as biomass, biofuel, geothermal and hydropower generate the majority of the remaining 10 percent.

The nuclear production plant, Ignalia, is due to be decommissioned in 2009, but plans for a new nuclear facility are underway. Currently there is agreement between Lithuania, Latvia and Estonia and separately between Poland and Lithuania for a joint new nuclear facility. Details are still being settled regarding Poland's participation in the facility with Latvia and Estonia. Although the European Commission has expressed reservations for such a facility, final agreements for plant development are due to be signed by 2008 with a tender planned for 2009. Based on current plans the plant should be completed and operational by 2015.

On January 18, 2007 Lithuania published an Updated National Energy Plan which emphasizes its commitment to renewable energy, both biomass and biofuel. Lithuania wants to become less dependent on the world market for its energy needs. It is currently heavily dependent on Russia, particularly for inputs for its nuclear power plant and for natural gas. There is a general concern that Russia has become an unreliable energy source, noting problems with the Russian energy supply to several of the countries in the region. In addition, the high price of oil has also generated interest in alternative energy sources.

### Biofuel: Current Situation

Lithuania began producing biofuel in 2004 in two plants, Rapsoila located near Mazeikiai and Biofuture in Silute ([www.biofuture.lt/en](http://www.biofuture.lt/en)). In 2006 Lithuania produced 25,000 MT of biofuel, 10,000 of biodiesel and 15,000 of ethanol. (In contrast, 1.2 million MT of conventional fuel was consumed in Lithuania in 2006.) Domestic agricultural production supplies all the raw material for the two biofuel production plants. Rapeseed is used for biodiesel production and wheat, rye and a wheat/rye blend is used for ethanol production.

Lithuania permits 5 percent biodiesel and 7 percent ethanol components in fuels. The government believes they will surpass the EU target of 5.75 percent biofuel components in fuel used for transportation by 2010 and it supports making these EU goals mandatory.

In 2007 Lithuanian biofuel production should reach 60,000 MT. Ethanol production will increase to 20,000 MT with increased production in the Biofuture plant. Mestila, a new biodiesel production plant that was completed near Klaipeda in an economic free zone, is due to begin production this spring and will increase national production of biodiesel to 40,000 MT.

Biofuel production is subsidized in Lithuania. The producers of grain ethanol receive 114 Lithuanian Litas (about \$38 USD) per MT and biodiesel receive 160 Litas (about \$53 USD) based on raw input. Even with these subsidies these companies are not making a profit. (Government sources speculate that biofuel production is only profitable when oil prices rise above \$70.00 USD/barrel.) Additional incentives are under consideration by the Lithuanian

Ministries of Agriculture, Environment and Economy. Lithuanian farmers receive the EU based subsidies of 45 Euro per hectare for selling crops for energy production.<sup>1</sup>

### **Biofuel: Future plans**

The Lithuanian Ministry of Agriculture has set production targets of 190 thousand tons of biodiesel and 190 thousand tons of ethanol for 2010. Even at those levels, Lithuania believes it can produce enough raw materials domestically for biofuel production, but above 380 thousand MT, it would need to import grain. The government believes that these ambitious projections are possible to meet based on the new biofuel plants under construction and the plans to increase acreage of biofuel crops. However, at those high levels of biofuel production, officials acknowledge that the problem becomes sufficient demand for biofuel.

The government is currently developing regulations and policies based on their National Energy Plan. They are looking into technological advances, such as cars and machinery that can operate using fuel that contains 40 to 50 percent biofuel. They are also considering setting mandatory levels of biofuel use in transportation and other sectors.

### **Biomass: Current situation**

Lithuania is 33 percent forested, compared to Latvia and Estonia each with 50 percent forested area, but it is the largest producer and consumer of biomass among the three Baltic counties. Inputs for biomass in Lithuania are domestic and include wood, straw, grasses, municipal waste, and fast growing trees.

By far the largest producer of biomass in Lithuania is operated by Vilnius energija, a district heating company that operates a plant in Vilnius producing 60 mega watts of energy, 12 in electricity and 48 in thermal heat. It supplies 10 percent of all heat for Vilnius and its surrounding district. Lithuania has introduced new biomass technology in seven regional heating plants throughout the country<sup>2</sup> that supply 14 percent of the country's heat. Lithuania currently produces 500 megawatts of biomass thermal power annually. One of the largest Lithuanian companies producing biomass incineration equipment is Axis Industries that has built more than 100 biomass wood-input boiler houses. An important producer of straw-based biomass boiler houses in Lithuania is Umega.

Biomass producers do not receive direct traditional government subsidies, but the government does pay about three times the price for electricity produced from renewable sources as compared to electricity from traditional sources. The biomass industry representatives believe that more direct subsidies for production are essential in order to meet the government's ambitious biomass production plans.

### **Biomass: Future plans**

In the Updated National Energy Plan the plans are for 50 percent of Lithuania's central heating to be provided by biomass thermal production by 2025. In addition, Lithuania plans to double its use of biomass renewables for heat and electricity production using wood, straw, municipal waste, as well as fast growing trees and crops. Lithuania is also looking to

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<sup>1</sup> This level of subsidy is currently limited to a total of 2 million hectares EU-wide in order to guarantee an expenditure ceiling for the program.

<sup>2</sup> The regional plants are located in: Telsiai, Kelme, Kazlu Ruda, Marijampole, Kybartai, Vilkaviskis, and Palanga.

invest in new technology in order to increase the efficiency of its biomass production, both through basic technology such as improved chippers and shredders, but also technology still under development that can use biomass to produce a liquid energy source.

**More information**

The largest biofuels organization in Lithuania is Litbioma with 18 members. Their web site is: [www.biokuras.lt](http://www.biokuras.lt) and contact telephone: 370-5-239-4800.